

USSR

VORONTSOVA, L. A., et al., Alyuminiy i Alyuminiyevyye Splavy v Elektrotekhnicheskikh Izdeliyakh, Moscow, Energiya Press, 1971, 224 pages

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USSR

UDC 615.277.3

PERSIANOVA, I. V., and SHEYNKER, Yu. N., All Union Chemical-Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze, Moscow

"The Rate of Hydrolytic Splitting of the Ethylenimine Cycles of Diethyleniminophosphorylamino-pyrimidines and Their Antitumor Activity"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 12, Dec 70, pp 33-36

Abstract: The rate of hydrolysis of diethyleniminophosphorylamino-pyrimidines was compared to the antitumor activity and toxicity. The hydrolysis was carried out at pH 4.0, 37°C, in physiological solution, using a $5 \cdot 10^{-4}$ mole/l concentration of the experimental compound. Rat sarcoma 45 was used as the model tumor. It was found that in the series of 2-(diethyleniminophosphorylamino)-pyrimidine a close parallel relationship exists between the rate of hydrolysis, toxicity, and antitumor activity; the later passing a maximum at one point, then going in the opposite direction to hydrolysis. On the other hand, the rate of hydrolysis showed no effect on the activity of the 4-(diethyleniminophosphorylamino)-pyrimidine derivatives.

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USSR

UDC 543.422.25:546.740'785.5

ALEKSEYEVA, L. M., DVORYANTSEVA, G. G., PERSIANOVA, I. V., SHEYNKER, YU. N., PALEY, R. M., and KOCHERGIN, P. M., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Protonization of the Derivatives of Pyrrolo[1,2-a]benzimidazole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1132-1137

Abstract: Protonization of a series of pyrrolo[1,2-a]benzimidazole derivatives in trifluoroacetic acid has been studied by PMR method. The 1,3-unsubstituted compounds protonize exclusively on the C₁ atom. Pyrrolobenzimidazoles with a methyl substituent on position 1 form a mixture of two protonized forms under identical conditions, corresponding to the addition of a proton to C₁ and C₃ respectively. Relative content of the C₃ protonized form decreases gradually from 81% to 18% going from a compound unsubstituted in position 3 to the respective 3-phenyl- and 3-methyl derivatives. Basicity constants of pyrrolobenzimidazoles decrease symbatically with the increase of the relative content of this form. Relative proton acceptor capability of indolinine, pyrrolo[1,2-a]imidazole and pyrrolo[1,2-a]benzimidazole has been calculated from the protonization data and from indexes of reactivity.

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USSR

P UDC 620.197.3

GROMOVA, A. I., GERASIMOV, V. V., VRALEV, N. YA., ROZENFEL'D, I. L., and
PERSIANISEVA, V. P.

"Protection of Perlitic Steels Against Corrosion in the Water of Atomic Power
Installations"

Moscow, Zashchita Metallcv, Vol 6, No 2, Mar-Apr 70, pp 227-231.

Abstract: The low stability of perlitic steels at 20-80°C in water saturated with air limits their use in atomic power engineering. This study describes a test in which steel specimens completely immersed in water saturated with air and containing 1 g/l hydrazine or 10% dicyclohexylamine at 20 and 80°C were found to corrode steadily, the corrosion rate being almost two orders of magnitude lower than that in water without inhibiting additions, where the steel had developed pits. Dicyclohexylamine (10%) was found to be more effective than hydrazine for the incomplete immersion of perlitic steel along the water line and above the water. The 10% solution of dicyclohexylamine is radiation-resistant within the reactor spectrum up to the integral dose of 10^{15} n/cm² (for thermal neutrons). Tables in the original article show the corrosion of perlitic steels at complete immersion in desalted water saturated with air under static conditions, corrosion

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GROMOVA, A. I., et al., Zashchita Metallov, Vol 6, No 2, Mar-Apr 70, pp 227-231

rates of steel at complete immersion in desalted water with hydrazine additions, and corrosion rates of steel in desalted water with various additions, including dicyclohexylamine, hydrazine, octadecylamine, and hexamethyleneamine.

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1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ON SINGULAR AND QUASISINGULAR ORDERS OF CURVATURE OF INTEGRAL
CURVES IN A THREE DIMENSIONAL SPACE -U-
AUTHOR-(02)-KUKLES, I.S., PERSIDSKAYA, L.B. *P*

COUNTRY OF INFO--USSR

SOURCE--KAZAN', IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, MATEMATIKA, NO 2,
FEB 70, PP 32-39
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--DIFFERENTIAL EQUATION SYSTEM, CURVE GEOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1437

STEP NO--UR/0140/70/000/002/0032/0039

CIRC ACCESSION NO--AP0125071

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125071

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE IS A CONTINUATION OF A PREVIOUS ARTICLE BY THE AUTHORS ON EXTENDING FROMMER'S METHOD TO A SYSTEM OF THREE DIFFERENTIAL EQUATIONS. THE SYSTEM CONSIDERED IS (EQUATION SHOWN ON MICROFICHE). WHERE m IS LARGER THAN OR EQUAL TO 1, AND P AND Q ARE POLYNOMIALS WITHOUT ABSOLUTE TERMS. THE PREVIOUS ARTICLE CONSIDERED CONDITIONS FOR THE EXISTENCE OF CHARACTERISTICS OF THE ABOVE SYSTEM WITH ZERO OR INFINITE ORDERS OF CURVATURE. THE PRESENT ARTICLE CONSIDERS SINGULAR, SEMISINGULAR, AND QUASISINGULAR ORDERS OF CURVATURE.

UNCLASSIFIED

USSR

UDC 517.917

KUKLES, I. S., PERSIDSKAYA, L. B., Samarkand

"On Singular and Quasisingular Orders of Curvature of Integral Curves in a Three-Dimensional Space"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy -- Matematika, No 2, Feb 70, pp 32-39

Abstract: The article is a continuation of a previous article by the authors on extending FROMMER's method to a system of three differential equations. The system considered is

$$z^m \frac{dx}{dz} = P(x, y, z); \quad z^m \frac{dy}{dz} = Q(x, y, z),$$

where $m \geq 1$, and P and Q are polynomials without absolute terms. The previous article considered conditions for the existence of characteristics of the above system with zero or infinite orders of curvature. The present article considers singular, semisingular, and quasisingular orders of curvature.

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USSR

UDC: 669.15'782'743'295-196

ZHIRONKIN, A. N., BURKANOV, A. G., RAYNES, L. S., BOROVNIKOV, A. A., SOKOLOV, V. L., PERSIDSKAYA, L. V., GABERTSETTEL', A. I., TOLOCHIN, V. G., TARAPATIN, P. S., Leningrad Kirov Plant

"Graphitized Steel"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334272, Division C, filed 15 Sep 69, published 30 Mar 72, p 104

Translation: This Author's Certificate introduces a graphitized steel which contains carbon, silicon, manganese, titanium and iron. As a distinguishing feature of the patent, friction properties are improved by adding copper and taking the components in the following proportions in percent: carbon--1.3-1.5; silicon--1.3-1.6; manganese--0.3-0.5; copper--1.2-1.6; titanium--0.25-0.4. Impurities are as follows (in percent): sulfur--less than 0.03; phosphorus--less than 0.035; chromium--0.20; nickel--less than 0.20; the remainder iron.

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USSR

UDC: 621.372.823.09

KAZAKOVA, N. A. and PERSIKOV, M. V.

"Wave Scattering by a Step in a Circular Multiwave Guide"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1573-1579

Abstract: Since other methods for solving the problem of wave scattering are either awkward or do not give good agreement with experimental results, the authors propose a method in which the elements of the dispersion matrix are represented in the form of stationary functionals of the electric field at the aperture of the junction or step. This method determines, to a sufficient degree of accuracy, the transmission, reflection, and transformation characteristics of the wave. The problem then reduces to the solution of a linear algebraic equation in terms of the desired characteristic. An explanation of the method is given using as an example the problem of finding the dispersion matrix of magnetically symmetrical waves. Analysis of the problem uses a variational device developed to find the coefficient of reflection in a single-wave approximation. The authors express their gratitude to B. Z. Katsenelenbaum for his valuable advice.

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Waveguides

USSR

UDC: 621.372.822(088.8)

PERSIKOV, M. V., UDALOV, V. V., Institute of Radio Engineering and Electronics, Academy of Sciences of the USSR

"A Waveguide H_{01} -to- H_{20} Converter"

USSR Author's Certificate No 233036, filed 16 Jan 67, published 4 May 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B206 P)

Translation: The proposed converter consists of sections of rectangular waveguide of ordinary and double width and a coupling element between the ends of these sections. To reduce the overall dimensions of the converter, the coupling element is made in the form of a half-wave length of T-section waveguide.

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USSR

UDC: 621.372.853.1.09

MIROVITSKIY, D. I., DUBROVIN, V. F., VZYATYSHEV, V. F., PERSIKOV, M. V.,
SHEVCHENKO, V. V.

"Cophased Directional Coupling of Electromagnetic Energy in Lines with Delayed Waves"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 37-40

Abstract: The authors describe the principal characteristics of the experimentally observed phenomenon of cophased directional coupling of energy in intersecting and branched dielectric waveguides. Energy transmission is characterized by the following peculiarities in such systems: 1. effective directional coupling is observed even when the section of interaction is of the order of a wavelength or less; 2. the coupled wave is in phase with the wave being propagated in the main channel; 3. effective energy coupling takes place when the coefficients of reflection from the region of line branching are small, which is observed when the wave delays are small in the lines; 4. effective directional energy transmission takes place over an extremely broad frequency range. A clear physical interpretation of the effect is given together with confirming experiments involving investigation of directional radiation of energy from a localized nonhomogeneity in the waveguide, an investigation of

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MIROVITSKIY, D. I., et al., Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71,
pp 37-40

the amplitude-phase dependence of a signal coupled out into a side branch as a function of the angle of intersection, etc. Some of the areas where the observed effect can be utilized in SHF technology are pointed out. The authors thank B. Z. Katsenelenbaum for interest in the work and discussion of the results.

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USSR

UDC: 621.396.677.833.3

KAPLYANSKIY, A. A., PERSIKOV, M. V.

"Concerning the Possibility of Phase Correction on the Small Reflector of a Two-Reflector Spherical Antenna"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 3), Leningrad, 1971, pp 253-257 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B61)

Translation: Redistribution of the field in the aperture of a spherical reflector is analyzed in the geometric optics approximation in the case of axisymmetric deformations with subsequent phase correction by changing the shape of the small reflector. Two illustrations, bibliography of five titles. Resumé.

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USSR

UDC: 621.373.531.3(088.8)

PERSIN, S. M.

"A Sawtooth Voltage Generator"

USSR Author's Certificate No 262167, filed 30 Mar 67, published 20 May 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G279 P)

Translation: This Author's Certificate introduces a sawtooth voltage generator which contains keys, integrating RC circuits, semiconductor diodes and a power supply. To improve accuracy and simplify the circuit, the generator contains an additional capacitor connected between the input of one integrating RC circuit and the point where the resistor is tied to the capacitor in the other integrating RC circuit, the inputs of the integrating RC circuits being connected through the semiconductor diodes to the power supply.

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Acc. Nr.:

ARO105440

Ref. Code: UR0000

JPRS 49937

Electroacoustic System for Measuring Wind and Temperature

(Abstract: "A Method for Constructing an Electroacoustic System for Measuring Wind and Temperature Parameters," by S. M. Persin, E. L. Persina and M. V. Popov; Leningrad, Trudy Glavnoy Geofizicheskoy Observatorii, No 40, 1969, pp 65-67)

From: Moscow, Referativnyy Zhurnal, Geofizika, Svodnyy Tom, No 1, 1970, 18587

A phase-frequency method for constructing an electroacoustic system for measuring wind velocity and temperature is described. The authors give a block diagram of an acoustic anemometer based on the phase-frequency method. This method makes it possible to eliminate a number of shortcomings characteristic of the phase and frequency measurement methods. The phase-frequency method can be used for measuring both the mean wind velocities and temperature, as well as their fluctuations. Bibliography of 6 items.

Real/Frame

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USSR

UDC: 621.317.44

AFANAS'YEV, Yu. V., GRINBAUM, M. B., ~~PERSIYANOV, T. V.~~, PISHCHER, I. V.,
REKALOVA, G. I., SHAKHOV, A. A., Leningrad Electrical Engineering Institute imeni V. I. Ul'yanov (Lenin)

"A Device for Measuring Magnetic Fields"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335628, Division G, filed 10 Nov 70, published 11 Apr 72, pp 189-190

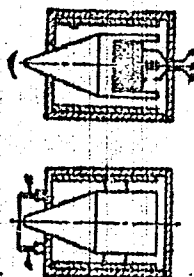
Translation: This Author's Certificate introduces a device for measuring magnetic fields. The device contains an acoustic concentrator coupled to a hollow conducting half-wave cup holding an electromechanical converter such as a piezoelectric converter, needle holders mounted on an acoustic neutral, and a microwire which acts as part of the measurement loop. The microwire is fastened in supports and is put into oscillatory motion by the concentrator mentioned above. As a distinguishing feature of the patent, in order to measure the normal component of the field on the surface of magnetized bodies, the device is equipped with a second electro-mechanical converter connected in antiphase with the first. The converters

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AFANAS'YEV, Yu. V. et al., USSR Author's Certificate No 335628

are securely fastened to the concentrator base which is made in the form of a wedge. The converters are arranged symmetrically with the geometric axis of the wedge, which is excited on the resonance frequency of flexural vibrations of the converters.



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USSR

UDC: 621.317.44

AFANAS'YEV, Yu. V., GRINBAUM, M. B., PERSTYANOV, T. V., PISHCHER, I. V.,
REKALOVA, G. I., SHAKHOV, A. A., Leningrad Electrical Engineering Institute
imeni V. I. Ul'yanov (Lenin)

"A Device for Measuring Magnetic Fields"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 13, May 72, Author's Certificate No 335629, Division G, filed 10 Nov 70,
published 11 Apr 72, p 190

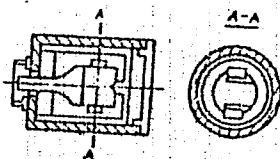
Translation: This Author's Certificate introduces a device for measuring magnetic fields. The device contains an acoustic concentrator coupled to an electromechanical transducer such as a piezoelectric converter, needle holders mounted on an acoustic neutral, and a microwire which acts as part of the measurement loop and is fastened in supports and put into oscillatory motion by the transducer. As a distinguishing feature of the patent, provision is made for measuring the induction of the magnetic field inside the cavities of magnetized articles. For this purpose the device is equipped with a second electromechanical transducer of longitudinal oscillations connected in phase with the first. The transducers are securely fastened on

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AFANS'YEV, Yu. V. et al., USSR Author's Certificate No 335629

opposite sides of the lateral surface of the concentrator, which is made in the shape of a truncated cone and is excited on the resonance frequency of torsional vibrations of the transducers.



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- 1.22 -

USSR

UDC 536.53.001.2

SERGEYEV, A. G., KRIVONOSOV, A. I., and PERSOV, I. A.

"Temperature Indicator Made From a Monocrystalline Thermoresistor"

Sb. nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute), No 10, 1970, pp 183-185 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 2, Feb 71, Abstract No 2.32.1129)

Translation: The characteristics of germanium monocrystalline thermoresistors made of dendritic tape and obtained by the method of dendritic crystallization from supercooled germanium melts are presented. The results of studying their application as temperature sensors are presented. The standard temperature characteristics of the sensitive elements based on a germanium thermoresistor and also the scattering of the temperature characteristics are presented in a table. The maximum temperature of the indicator with a monocrystalline thermoresistor has an upper bound equal to the solder temperature of the electric leads and it can be increased by specially connected leads, for example, by the method of diffusion welding. The theoretical measuring circuit of the temperature indicator based on a monocrystalline thermoresistor is presented. There are 4 illustrations and a 1-entry bibliography.

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USSR

UDC: 533.652/.661.013

VERESHCHAGIN, I. F., MALANIN, V. V., PESTREININ, V. M.

"Optimizing the Time of Flight of an Aircraft With Controllable Radial Thrust"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1971, No 239, pp 130-139 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B341)

Translation: The authors consider motion of an aircraft in a central field of gravity with controllable radial force, the control function being limited with respect to absolute value to some fixed constant. The principle of the maximum is used to solve the problem of speed-optimum motion of the aircraft. Selected as phase coordinates are; the inverse of the radius vector of the vehicle and its derivative with respect to the polar angle. Two examples are presented, one of which is transition from an outer to an inner orbit. In this example, motion first takes place with maximum attraction, and then with maximum repulsion. G. S. Arcnin.

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USSR

UDC 531.383

OSOKIN, YU. A., PESTUNOV, A. YU., (Kiev Polytechnic Institute)

"Concerning the Astatic Gyroscope Systematic Drift About a Gimbal Outer Frame Axis in the Presence of Angular Base Oscillation"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Vol 14, No 9, 1971, pp 83-88

Abstract: Systematical drift of an astatic gyroscope about a gimbal outer frame axis in the presence of random and harmonic angular base oscillations about three rectangular coordinate axis is considered. Simple formulas for determining the systematic drift $\langle \alpha \rangle$ of an astatic gyroscope in the presence of the base correlated angular oscillations and vibrations about three rectangular axis are derived. Their analysis shows that in the design and tests of an astatic gyroscope, the method of equivalent harmonic oscillations, consisting of substituting a harmonic process of the same rate $(\sigma_g^2 = \sigma_g^2/2)$ for the random process can be used, when the predominant frequencies of random process resolution spectrum are far off the gyroscope natural vibrations frequencies. The harmonic oscillations

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OSOKIN, YU. A., and PESTUNOV, A. YU., Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Vol 14, No 9, 1971, pp 83-88

frequency is selected equal to a predominant random process frequency. In transition to equivalent harmonic oscillations in the case of correlated base oscillations about the three rectangular axes the phase drift between components is equal to \sqrt{H} and v is the variation frequency or a reciprocal correlated function, and H - is the displacement of the reciprocal correlated function with respect to ordinate axis.

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172 034 UNCLASSIFIED
TITLE--HYDROELASTICITY OF SHELLS -U-

PROCESSING DATE--27NOV70

AUTHOR--(02)-MNEV, YE.N., PERTSEV, A.K.

COUNTRY OF INFO--USSR

SOURCE--HYDROELASTICITY OF SHELLS (GIDROUPRUGOST' OBOLOCHEK) LENINGRAD,
SUDDSTROYENIYE, 1970, 365 PP
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STRUCTURAL ENGINEERING, SHOCK WAVE, SHIPBUILDING ENGINEERING,
SHELL STRUCTURE STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1717

STEP NO--UR/0000/70/000/000/0001/0365

CIRC ACCESSION NO--AM0130578

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0130578

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: FROM THE SCIENTIFIC EDITOR 3. FROM AUTHORS 5. INTRODUCTION 7. CHAPTER I. FREE VIBRATIONS OF SHELLS CONTACTING WITH A LIQUID 14. II. DYNAMIC REACTION OF AN AXISYMMETRICAL CYLINDRICAL SYSTEM TO APERIODIC LOAD 76. III. INTERACTION OF A SHOCK WAVE WITH SHELLS OF SPHERICAL AND CYLINDRICAL SHAPES 141. IV. MORE COMPLEX LINEAR PROBLEMS OF HYDROELASTICITY OF SHELLS 219. V. STABILITY OF SHELLS CONTACTING WITH A LIQUID UNDER DYNAMIC LOAD 280. BIBLIOGRAPHY 359. THE BOOK DEALS WITH PROBLEMS CONNECTED WITH CALCULATION OF INTERACTIONS OF SHELLS WITH A LIQUID; FREE AND FORCED VIBRATIONS OF SHELL LIQUID SYSTEMS; DIFFRACTION PROCESSES; STABILITY OF SHELLS CONTACTING WITH A LIQUID; INTERACTION UNDER DYNAMIC LOAD. THE BOOK WAS WRITTEN FOR ENGINEERS, SCIENTISTS, PROFESSORS AND STUDENTS WORKING ON DYNAMIC STRENGTH OF SHIP STRUCTURES. IT CAN BE USEFUL ALSO TO SPECIALISTS OF OTHER ENGINEERS FIELDS INTERESTED IN THE BEHAVIOR OF SHELL LIQUID SYSTEMS IN DYNAMICS.

UNCLASSIFIED

172 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHOTOMULTIPLIER SPECTRAL SENSITIVITY AS A FUNCITON OF VOLTAGE AND
I.R. ILLUMINATION -U-
AUTHOR-(04)-TOLKACH, P.N., PERTSEV, A.N., CHUDAKOV, V.A., LEVKOVICH, A.O.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKLAD. SPEKTROSK. (USSR) VO. 12. NO. 1. P. 126-128 (JAN.
1970).
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--IR PHOTOMULTIPLIER, PULSED ILLUMINATION, PHOTOCATHODE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1764 STEP NO--UR/0368/70/012/001/0126/0128
CIRC ACCESSION NO--AP0122094
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0122094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURRENTS OF PHOTOCATHODE, DIAPHRAGM, AND FIRST DYNODE WERE MEASURED DURING IRRADIATION OF THE PHOTOCATHODE BY LIGHT WITH A WAVELENGTH OF λ_{SUB1} EQUALS 650 NM AND λ_{SUB2} EQUALS 450 NM, AND AS A FUNCTION OF SUPPLY VOLTAGE, AS WELL AS WITH (AND WITHOUT) I.R. ILLUMINATION. THE I.R. ILLUMINATION IN THE REGIME OF SATURATION INCREASES THE PHOTOCATHODE CURRENT, WHILE THE DIFFERENCE BETWEEN THE DYNODE AND CATHODE CURRENTS IS POSITIVE. AT THE SAME TIME, THE RATIO OF LATTER DIFFERENCE AND OF THE DYNODE CURRENT IS A FUNCTION OF THE WAVELENGTH. THE RATIO OF DYNODE CURRENTS FOR THE TWO WAVELENGTHS DEPENDS UPON THE VOLTAGE BEFORE THE SATURATION REGIME. THE OBSERVED EFFECTS, WHICH AMOUNT TO SEVERAL PERCENTS, ARE INTERPRETED ON THE BASIS OF SB-CS PHOTOCATHODE MODEL.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--RECORDING OF ULTRAWEAK LUMINOUS FLUXES IN THE 200-850 MMU REGION
-U-
AUTHOR--(03)-PERTSEV, A.N., PODOLNYY, E.I., SEL'YANINOV, YU.YE.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 523-7
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LUMINESCENCE SPECTRUM, OPTIC SPECTROMETER, PHOTOMULTIPLIER
TUBE, PULSE ANALYZER, RECEIVER SENSITIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1491 STEP NO--UR/0368/70/012/003/0523/0527
CIRC ACCESSION NO--AP0118478
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118478

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHODS ARE DISCUSSED OF MEASURING ULTRAWEAK LUMINOUS FLUXES BY USING PHOTOMULTIPLIERS; A MIN. NO. OF PHOTOELECTRONS (N) DETECTABLE BY THE INDIVIDUAL TECHNIQUE ARE QUANT. ESTD. THE METHOD OF DISCRETE RECORDING OF PHOTONS WITH DIFFERENTIAL PULSE HEIGHT DISCRIMINATIONS IS BY FAR THE MOST EFFECTIVE TECHNIQUE TO MEASURE ULTRAWEAK LUMINOUS FLUXES, N BEING GIVEN BY THE RELATION $N \text{ EQUALS } (2N \text{ SUBT-T}) \text{ PRIMEONEHALF}$ WHEN N SUBT DENOTES AV. NO. OF THERMOELECTRONS FROM PHOTOCATHODE-SEC AND T TIME OR RECORDING. A MODERNIZED VARIANT OF THE TECHNIQUE IS DESCRIBED AND ITS FUNDAMENTAL OPERATING CHARACTERISTICS ARE PRESENTED. THE ELECTRONIC DEVICE TOGETHER WITH AN OPTICAL SPECTROMETER PROVED TO BE EFFICIENT FOR STUDYING BIO, PHOTO, AND RADIOLUMINESCENCE IN THE 200-850 M MU SPECTRAL REGION.

UNCLASSIFIED

USSR

UDC: 621.316.8:621.315.5

PERTSEV, A. V., KISELEV, V. S., BASHAVNIKOV, V. A.

"Adjustment of Tantalum Film Resistors"

Kiev, IVUZ Radioelektronika, Vol 15, No 5, May 72, pp 626-630

Abstract: The authors discuss questions of adjustment of tantalum film resistors by the method of localized anodizing of resistor sections. The method of calculation is given together with engineering formulas and graphs for calculating the dimensions of localized anodized sections, or the number of such sections when dimensions are predetermined, taking resistor values before and after anodizing as a point of departure. Experimental results agree with the calculations.

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USSR

UDC 778.534.83

PROVORNOV, S. M., GREBENNIKOV, O. F., GUSEV, V. P., PERTSEV, S. M.

"A High-Speed Screen Camera for Slow-Motion Photography"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 15, No 4, 1970, pp 269-271

Abstract: The principle of construction of the RKS-21 slow-motion screen camera is presented. The camera can take up to 2 million frames per second and has an equivalent relative aperture of 1 : 4. This camera was developed for use at the Leningrad Forestry Engineering Academy to study woodcutting processes in reflected light. The RKS-21 camera has the same light intensity as the RKS-11 camera previously used for this purpose, but has an exposure frequency one order of magnitude higher. Rather than using rotating diaphragms, as used in screen cameras by Courtney-Pratt in the United States, the camera uses a screen with forward motion.

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1/2 011 UNCLASSIFIED PROCESSING DATE--16DCT70
TITLE--MEASUREMENT OF THE CONCENTRATION OF A REGENERATION SOLUTION OF
AMMONIUM SULFATE IN A CHEMICAL WATER TREATMENT PLANT OF A THERMAL POWER
AUTHOR--(04)-YERMAKOV, YU.V., GLUKHOV, V.S., AFANASYEV, M.I., PERTSEVA,
~~I.V.~~
COUNTRY OF INFO--USSR *P*
SOURCE--ENERGETIK 1969, 17(8), 14-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, ENERGY CONVERSION (NON-PROPULSIVE)
TOPIC TAGS--WATER REGENERATION, AMMONIUM SULFATE, SOLUTION CONCENTRATION,
ELECTRIC CONDUCTIVITY MEASUREMENT, ELECTRIC POWER PLANT/(U)KK8
CONDUCTIVITY METER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0051 STEP NO--UR/0091/69/017/008/0014/0015
CIRC ACCESSION NO--AP0105150
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

272 011
CIRC ACCESSION NO--AP0105150

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONCNS. OF (NH SUB4) SUB2 SO
SUB4 WERE DETD. IN THE RANGE OF 1-4PERCENT, CONTINUOUSLY BY THE TITLE
APP. WITH A LOW FREQUENCY CONTACTLESS ELECTRODE, WITH AN ACCURACY OF
PLUS OR MINUS 0.2PERCENT. THE SCHEME OF THE APP. IS GIVEN.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF ACUTE AND CHRONIC HYPOXIA ON SOME CHARACTERISTICS OF
CARBOHYDRATES AND LIPIUS METABOLISM IN RATS -U-
AUTHOR--(04)--SIMANOVSKIY, L.N., PERTSEVA, M.N., ZHELUDKOVA, Z.P., MAZINA,
T.I.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 1, PP 77-83
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPOXIA, CARBOHYDRATE METABOLISM, LIPID METABOLISM, RAT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0361

STEP NO--UR/0301/70/016/001/0077/0083

CIRC ACCESSION NO--AP0132590

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132590

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGES IN HEXOKINASE AND PHOSPHORYLASE ACTIVITIES, GLYCOLYSIS RATE IN SKELETAL MUSCLES AND FREE FATTY ACIDS CONTENT IN THE PLASMA OF RATS SUBJECTED TO HYPOXIA, IMITATING CONDITIONS (7.600 M OF ALTITUDE DURING 1.5-5 HR) AND DURING THE TRAINING TO HYPOXIC STATE (SIMULATED ALTITUDES 2.500-7.600 M, 30 DAYS) HAVE BEEN STUDIED. IT HAS BEEN SHOWN THAT DURING THE FIRST PERIOD OF ADAPTATION TO THE PROLONGED OXYGEN STARVATION ONE MAY OBSERVE THE PICTURE SIMILAR TO THAT AT ACUTE HYPOXIA: THE LACK OF CHANGES IN HEXOKINASE AND PHOSPHORYLASE ACTIVITIES IN SKELETAL MUSCLES AND ELEVATION IN FREE FATTY ACIDS CONTENT IN BLOOD PLASMA. THE CHANGES IN CARBOHYDRATE METABOLISM WERE NOTED AT 20TH DAY OF TRAINING: THE DECREASE IN HEXOKINASE ACTIVITY AND RISE IN PHOSPHORYLASE A. CHANGES IN GLYCOLYSIS AND GLYCOGENOLYSIS RATE WAS CORRELATED WITH CHANGES IN ENZYHATIC ACTIVITY. FACILITY: I. M. SECHENOV INSTITUTE OF DEVELOPMENTAL PHYSIOLOGY AND BIOCHEMISTRY USSR ACADEMY OF SCIENCES, LENINGRAD.

UNCLASSIFIED

Organ and Tissue Transplantation

USSR

UDC 616.831.95-089.843-097

MESKHIYA, N. SH., PERTSEVA, T. N., AND KHUDAYTOV, I. S., Institute of Neurosurgery imeni N. N. Burdenko, Academy of Medical Sciences USSR, and Laboratory of Tissue Preservation, Central Institute of Traumatology and Orthopedics, Ministry of Health USSR, Moscow

"The Immunological Reaction of the Recipient's Organism to the Homotransplantation of Dura Mater Preserved at a Low Temperature"

Moscow, Voprosy Neyrokhirurgii, Vol 35, No 5, Sep/Oct 71, pp 58-62

Abstract: In experiments conducted on rabbits, homotransplantation of patches of fresh dura mater and of dura mater preserved for 30 days at minus 70° was carried out. The immunological reaction of the organism to transplantation antigens, as indicated by the increase in the weight of the regional lymph nodes and the induced formation in them of immature cells of the lymphoid series of the type that form antibodies, was much less pronounced than that which followed homotransplantation of a skin patch on an ear. Both on grafting of dura mater and of skin, the reaction in the lymph nodes was stronger on the side of the operation than the opposite side. The peak of the immunological reaction, as indicated by the accumulation of immature lymphoid cells in the regional lymph nodes, was equally high on transplantation of dura mater preserved at minus 70° and that of fresh dura

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USSR

MESKHIYA, N. SH., et al., Voprosy Neyrokhirurgii, Vol 35, No 5, Sep/Oct 71, pp 58-62

mater, but developed on the 8-10th day after transplantation in the first case and on the 6-7th day in the second. The delayed immunogenesis on transplantation of the tissue that had been frozen was presumably due to the longer time that was required for the development of a full-fledged interaction between this tissue and the organism.

2/2

USSR

UDC: 621.313.333(083.75)

BERESOV, G. I., Candidate Technical Sciences; BEPEZNOY, Yu. A.,
OSIPOVICH, V. T., and SHIRNIN, I. G., Engineers

"New Government Standard on Explosion-Proof Asynchronous Motors
of the VAO Series with Power Ratings of from 132 to 1000 Kilowatts"

Moscow, Elektrotekhnika, No. 2, February 1971, pp 59-60

Abstract: This standard is the second on motors of the VAO series
to be stated, the first relating to machines with a power rating
of up to 100 kW. The need for the standards was stimulated by
requirements for high-power asynchronous electric motors for the
growing number of chemical plants, for mining in general and hy-
draulic mining of coal in particular. Up until recently, the re-
quirements of the national economy for low-voltage explosion-
proof electric motors with higher power ratings than 100 kW were
satisfied by the MA-36 motor. From the viewpoint of weight and

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USSR

PERTSOV, G. I., et al, Elektrotehnika, No 2, Feb 71, pp 59-60

energy output, however, the MA-36 is inferior to the best foreign motors. High-voltage explosion-proof electric motors were not put into production in the Soviet Union until 1968. The machines to which the new standard applies were developed by the Institute of the VNIIE /expansion unknown/ in cooperation with the Elektro-mash, Sibelectrotyazhmash, and Karl Marx First of May Plants.

2/2

Environment

USSR

UDC 539.16:551.46

PERTSOV, L. A., PROKHORYCHEVA, N. P., and SOKOVISHIN, V. A., Atlantic Scientific Research Institute of Fisheries and Oceanography

"Biological Significance of Current Levels of Radioactive Pollution of the Sea"

Moscow, Nauchnyye Doklady Vysshey Shkoly, Biologicheskkiye Nauki, No 7, 1972, pp 64-68

Abstract: Examination of various organs and tissues of sharks, burbot, tuna, herring, eels, and other fishes showed that these hydrobionts receive considerably smaller irradiation doses from strontium-90, cesium-137, and other artificial radionuclides now polluting the ocean than they do from natural radiation sources normally present in the water. The exposure dose of gamma radiation from artificial radionuclides scattered in the water is approximately one million times less than from natural radiation sources. The average dose of internal irradiation by natural radionuclides deposited in muscle is almost two hundred times higher than the average dose from cesium-137. Approximately the same ratio is found in all the internal organs of the fish. Thus, the current levels of radioactive pollution of the ocean and hydrobionts are not pathogenic.

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1/2 042 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PHYSICO CHEMICAL EFFECT OF THE MEDIUM ON THE DEFORMATION, RUPTURE,
AND PROCESSING OF SOLIDS -U-
AUTHOR--(02)--PERTSOV, N.V., SHCHUKIN, YE.D. P
COUNTRY OF INFO--USSR
SOURCE--FIZIKA I KHIM. OBRABOT. MAT., MAR.--APR. 1970, (2), 60-82
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--METAL CRYSTAL, SURFACE ACTIVE AGENT, BIBLIOGRAPHY, METAL
CORROSION, ADSORPTION, METAL DEFORMATION, DUCTILITY, METAL MACHINING,
DEFORMATION RESISTANCE, METAL CRACKING, RUPTURE STRENGTH, MECHANICAL
PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0318 STEP NO--UR/0472/70/000/002/0060/0082
CIRC ACCESSION NO--AP0129550
UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129550

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE SURROUNDING MEDIUM ON THE PHYSICAL, CHEMICAL, AND MECHANICAL PROPERTIES OF METALLIC CRYSTALS AND POLYCRYSTALLINE AGGREGATES IS REVIEWED WITH SPECIAL REF. TO ADSORPTION PHENOMENA AND THE PHYSICO CHEMICAL INFLUENCE OF SURFACE ACTIVE MATERIALS ON THE DEFORMATION RESISTANCE, DUCTILITY, RUPTURE, AND WORKING (MACHINING) OF METALS. THE PRACTICAL IMPORTANCE OF SURFACE ACTIVE SUBSTANCES IS PARTICULARLY EVIDENT IN CONNECTION WITH PROBLEMS OF CORROSION AND THE PROTECTION OF METALS, AND A BETTER UNDERSTANDING OF THEIR EFFECTS IN ONE OF THE MOST PRESSING PROBLEMS OF TODAY.

UNCLASSIFIED

USSR

UDC 541.183:576.8:666.1

PERTSOVSKAYA, A. E., and ZVYAGINTSEV, D. G., Chair of Soil Biology, Moscow State University imeni M. V. Lomonosov, Moscow

"Adsorption of Bacteria on Glass, Modified Glass Surfaces, and Polymer Films"

Moscow, Nauchnyye Doklady Vysshey Shkoly, Biologicheskkiye Nauki, No 3, 1971, pp 100-105

Abstract: The adsorption of microorganisms from an aqueous medium on the surface of glass (functional group OH^-), glass modified by deposition of silicones with the functional groups Me or NH_2^+ on the surface, and polymer films with the functional groups NH_2^+ (polyamide), $-\text{CH}_2-\text{CH}_2-$ (polyethylene), or COO^- on the surface was studied. All microorganisms could be subdivided into three groups: those that were adsorbed strongly on all surfaces independently of the nature of the functional group and the hydrophobic or hydrophilic nature of the adsorbent (I); those whose adsorbability varied with the nature of the adsorbents' functional groups, although they were adsorbed to a greater or lesser extent on most surfaces (II); those that were adsorbed weakly on all surfaces (III). Group I consisted of all cocci (Sarcina, 1/2

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USSR

PERTSOVSKAYA, A. E., and ZVYAGINTSEV, D. G., Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 3, 1971, pp 100-105

Micrococcus), all strains of Bacterium prodigiosum, and the majority of mycobacteria. The surface of these microorganisms presumably has a structure similar to that of a mosaic, with facets that have an affinity for different adsorbent surfaces. The majority of non-spore-forming bacteria belonged to group II. Group III consisted of all species of the genus Bacillus. Although their adsorption on all surfaces was weak, bacilli were adsorbed more strongly on hydrophobic than hydrophilic surfaces. The adsorbability varied with the strain for the same species and the age of bacterial cultures of the same strain. It was generally the same for live cells as those killed by auto-calving.

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USSR

UDC 576.8.095.383

ZVYAGINTSEV, D. G., PERTSOVSKAYA, A. F., YAKHNIN, YE. D., and AVERBAKH, E. I., Chair of Soil ~~Biology~~, ~~Biology~~ and Soil Faculty, Moscow State University imeni M. V. Lomonosov, Moscow, and Institute of Physical Chemistry, Academy of Sciences USSR

"Determination of the Degree of Adhesion of Cells of Microorganisms to Solid Surfaces"

Moscow, Mikrobiologiya, Vol 40, No 6, Nov/Dec 71, pp 1024-1028

Abstract: The force with which cells of 11 strains of microorganisms of 9 species adhered to the surface of a glass plate upon adsorption was determined on a centrifuge equipped with a special rotor. The number N_0 of cells adsorbed on the glass surface from suspensions of equal concentration before the force detaching them was applied decreased in the order Staphylococcus aureus 120 > Bacterium fimbriatum > Bacillus mesentericus 112 > Ser. marcescens 71 > Ser. marcescens 103 > Bac. mesentericus 53 > Pseudomonas fluorescens > Ps. pyocyanea Bac. cereus 116 > Bac. subtilis 27 > Saccharomyces cerevisiae. The value of $\chi_F = N \cdot 100 / N_0$, where N is the number of cells that remained on the surface after rotation at 16,000 rpm (7,800 rpm for Sacch. cerevisiae), decreased in the order Ser. marcescens 71 > Staph. aureus 120 > Ser. marcescens 103 > Satch. cerevisiae 1/2/

USSR

ZVYAGINTSEV, D. G., et al., Mikrobiologiya, Vol 40, No 6, Nov/Dec 71, pp 1024-1028

· *Bac. cereus* 116 > *Ps. pyocyanea* > *Bac. mesentericus* 53 > *Bact. fimbriatum* > *Ps. fluorescens* > *Bac. mesentericus* 112 > *Bac. subtilis* 27. The force F_{50} at which 50% of the cells adhering to the glass became detached was within the range of 4×10^{-7} - 4×10^{-4} dyne/cell for the microorganisms studied. χ_F decreased with increasing age of the cultures. It was typical for some strains (principally those of species of the genus *Bacillus*) that the number of cells which adhered to the surface was small, while F_{50} was large (0.6×10^{-5} dyne/cell). For *Ser. marcescens* 71 and *Staph. aureus* 120, both the number of cells that adhered and the force of adhesion were large. Non-sporiferous bacteria (e.g., those of the genus *Pseudomonas*) adhered to the solid surface in large numbers, while F_{50} for them was small (0.4×10^{-6} - 0.6×10^{-6} dyne/Cell). Consideration of the values of P_a equal to the ratio of F_{50} to the volume of a cell indicated that the force of adhesion on the basis of P_a was highest for *Ser. marcescens* 71 and *Staph. aureus* 120, while it was much lower for the other strains. An electron-microscopic examination showed that the great strength of adhesion of *Ser. marcescens* 71 and *Staph. aureus* 120 was due to the presence of thin cell-wall protuberances that facilitated contact. 2/2

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USSR

UDC 669.295.539.214

PERTSOVSKIY, N. Z., SHAKHANOVA, G. V., and BRUN, M. YA., All Union Institute of Light Alloys

"Features of Deformation and Ductility of Two-Phase Titanium Alloys with a Lamellar Structure"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 154-161

abstract: Microstructural features of deformation in (alpha+beta)-titanium alloys with a lamellar structure were investigated in relation to size of the alpha-colonies. Samples of VT3-1 alloy (5.7 Ti, 2.5 Al, 1.7 Cr, and 0.5 Fe) were subjected to pressure treatment by different modes. All samples were annealed by conventional means for this alloy: heated to 870°C for one hour, transferred to a furnace at 650°C for two hours, cooled in air. The microstructural components were measured (initial beta-grain size -- D, Alpha-colony size -- d, alpha-plate thickness -- b) and compared. Five different plate structures were found and it was noted that the larger the initial beta-grain size (D) the greater the tensile strength of the plate provided plate thickness is quite thin (b = 0.5-1.0 microns). At the same time ductility is lost (drops from 17.8 to 3.1%) and reduction in area drops off rapidly. Thus,

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USSR

PERTSOVSKIY, N. Z., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 154-161

optimum properties of good strength and ductility are achieved with small D, moderate size for d and relatively large b. Similar results were produced during investigations of alloys VT9, VT22 and a number of other alloys with a lamellar structure. Five figures, one table, four bibliographic references.

2/2

USSR

UDC 669.295:539.214

PERTSOVSKIY, N. Z., SHAKHANOVA, G. V., BRUN, M. YA., and NOTKIN, A. B.,
All-Union Institute of Light Metals

"On the Influence of the β -Phase on the Plasticity of Two-Phase Titanium Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72,
pp 887-890

Abstract: The influence of the β -phase on the microstructural deformation of titanium alloys was investigated on hot-rolled bars of VT9 alloys possessing a grained and lamellar α -phase and an initial fine fibrous structure, very similar to the structure of the previously (Ibid., Vol 30, 1970, p 1047) investigated VTZ-1 alloy. The results of mechanical investigations of both alloys, containing 15-20% of β -phase in the annealed state, are discussed by reference to tabulated data and microstructural deformation pictures of the VT9 alloy. The sharply decreased plasticity of the VT9 alloy in comparison with the VTZ-1 alloy explains the observed plasticity decrease by other authors of two-phase titanium alloys with lamellar-type structure with increased content of stabilizers. The presence of the β -phase increases
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USSR

PERTSOVSKIY, N. Z., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 887-890

the microinhomogeneity of deformation regardless of the type of the structure, contributing to a plasticity decrease of two-phase titanium alloys at room temperature. Two illustrations, one table, three bibliographic references.

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USSR

UDC: 669.295:539.211.539.42

PERTSOVSKIY, N. Z., and SHAKHANOVA, G. V.

"Fracture of VT3-1 Titanium Alloy"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, Sept 71, no 9,
pp 73-75

Abstract: A study is described on the effect of the type of structure and phase composition of the two-phase VT3-1 titanium alloy (6.04% Al; 2.45% Mo; 1.90% Cr; 0.40% Fe) on its mechanical properties exhibited in tensile tests. The relationship between the type of fracture and the mechanical properties is also discussed. Specimens with three types of structures are covered. Structure I is of an equiaxial finely granular type with an α -grain size of about 4 microns obtained by annealing rods in the $\alpha+\beta$ region at 940-1150°C; structure II is of a coarsely laminar type produced by annealing the same rods (as in structure I) in the β region at 1150°C, its primary β -grain size about 0.7 mm; structure III was obtained by extrusion of rods in the β region, of smaller size with an "interlocking" of γ -bundles with a single texture. Figures in the original article show all three

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USSR

PERTSOVSKIY, N. Z., et al, Metallovedeniye i termicheskaya obrabotka metallov, Sept 71, no 9, pp 73-75

types of structures of the VT3-1 alloy, a diagram of the mechanical properties at 20°C and the phase composition of the specimens, fracture macrostructures I, II, III of the alloy and, finally, electron microfractograms of the specimens of the test alloy. The experimental procedure and results are detailed and illustrated by the above figures. It is shown that the nature of the fracture in the specimens is determined by the type of structure and is unrelated to phase composition. The patterns of the electron microfractograms indicate the ductile nature of the failure of the test alloy irrespective of the type of structure and phase composition. The study fails to find a relationship between the type of fracture and the mechanical properties of VT3-1 alloy at 20°C.

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Titanium

USSR

UDC 536.425

PERTSOVSKIY, N. Z., BRUN, M. Ya., and SHAKHANOVA, G. V., All-Union Institute of Light Alloys

"Nature of Embrittlement of Two-Phase Titanium Alloys With Large Plate Structure"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 1047-1054

Abstract: The microstructural peculiarities of the processes of deformation and rupture of standard VTZ-1 ($\alpha + \beta$)-titanium alloy were studied with various types of initial structure. It was established that the basic reason for the decreased plasticity of two-phase alloys with large plate structure in comparison with fine grained equiaxial structure, regardless of the phase composition, is the "coarse" slippage arising as a result of inheritance of the structure of the high-temperature β -phase.

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PERSPANTSEV, I. G.

JPRS 59474
10 JULY 1973

THEORY OF STREAMER BREAKDOWN

[Article by A. I. Zolotarev, I. G. Perspantsev, V. L. Pliginskii, A. V. Rodin, A. N. Gerasimov, Moscow, Zhurnal Prikladnoy Matematiki i Tsveticheskoy Fiziki, Russian, No 1, 1973, signed to press 24 July 1972, pp 56-65]

The development of the successive theory of streamer breakdown of a streamer, which is governed, in turn, by the transport mechanism in the path of analysis of various qualitative streamer models [4].

It is assumed in [4] that the velocities of the streamers traveling toward the anode and cathode are determined by the drift rate of electrons. The mechanism of propagation of an anode-bound streamer is considered to be traveling toward the anode. On the leading edge of a streamer, electrons from the front of the cathode-bound streamer because of transfer of emission is ineffective because of the short path of the quanta, and a mechanism of development of a cathode-bound streamer, related to associative ionization of excited atoms, is proposed. These atoms are formed by far-traveling resonance photons from the wings of the spectral line.

A linear relationship between the velocity of streamers and their length turned out to be a very interesting prediction of theory [4]. This dependence was confirmed in experiments on streamer breakdown, initiated at the center of the discharge gap in spark chambers [6, 7]. At the same time, the velocity of the "breakdown wave" for streamers, developed from avalanches initiated at one of the electrodes, remains constant with satisfactory accuracy in intervals of length of the order of 1 m.

A qualitative theory that permits computation of the velocity of an anode-bound streamer in the case when velocity does not depend on length, is formulated in this article. Since the diffusion coefficient of excited

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USSR

UDC 621.371.029.55

MITIKHIN, Yu. V. and PERTSOVSKIY, R. A.

"Investigating Distributions of Radio Signal Amplitudes in an Auroral Shortwave Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 464-467 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A346)

Translation: Results are given of an investigation into the amplitude distribution of signals in the shortwave range over distances in auroral perturbed zones. The method of constructing histograms for various conditions of signal fading, especially in the presence of ionospheromagnetic perturbations and under conditions of signal propagation through the E ionosphere region, is described. The existence of strong signal fading, especially in the presence of ionospheric-magnetic perturbations and with propagation of the signal through the E region of the ionosphere, is established.
A. L.

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USSR

UDC 615.471:[614.777+628.19]074:543.42.062

SINEL'NIKOV, V. Ye., TIMAKHOV, O. N., ININ, Yu. S., IKONNIKOVA, S. V., GIKKEL', A. A., GONCHAROV, A. T., AFOHIN, V. I., PERSIYANTSEVA, V. B., and SOKOLOV, B. K., Central Design Bureau and Pilot Plant, USSR Academy of Medical Sciences, Moscow and Institute of Biology of Inland Waters, USSR Academy of Sciences, Borok, Yaroslavl Oblast

"A Multipurpose Spectrofluorimeter to Study Natural and Polluted Water"

Moscow, Gigiyena i Sanitariya, No 1, 1973, pp 65-68

Abstract: The akva-MF spectrofluorimeter developed by the authors can be used for rapid determination of individual organic and mineral compounds present in water, for automatic regulation of fluorescent substances in a stream, for detection in lakes and seas of water masses differing in chemical composition and origin, and for study of the conversion and breakdown of compounds under the influence of biological and physicochemical factors. Analyses can be made in the laboratory, in the field, or on a research vessel. The spectrum of fluorescent compounds can be obtained directly at the sampling site. The apparatus is a single-beam recording spectrofluorimeter designed to function in the visible and UV regions of the spectrum. With the use of interchangeable attachments, it can record spectra of fluorescence, excitation, and phosphorescence in a solution as well as substances separated in chromatographic zones on paper.

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P
Phytology

USSR

UDC: 58119

DMITRIYEVA, K.O., PERUANSKIY, YU.V.

"Nucleic Acid and Protein Changes in the Process of Development of Necrosis on Wheat Leaves by Rust"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 1, Jan/Feb 70, pp 50-53

Abstract: Changes in a leaf blade of wheat of the rust-resistant variety Centenario chapingo (K-43028) infected with spores of stem rust of wheat at the time of appearance of the third leaf were studied. Studies were conducted on the 5th, 7th, 9th, 11th, 13th and 16th day after infection. The beginning of visible necrosis occurred on the 9th day, and was associated with definite changes in the nucleoprotein metabolism. Within 5-7 days of infection an intense accumulation of RNA, DNA, and proteins was observed, apparently evoked by the stimulating effect of the pathogen on metabolism. If this mutual interaction continued it resulted in rapid aging of the leaves. However, in the necrotic areas on the 9-11th day, DNA content dropped in the nuclei of the cells, and its composition also altered. The cells surrounding the focus of infection died, creating a barrier to further spread of the mycelium. It was concluded that long before the necrosis in wheat leaves infected with rust appears, there is a complex biochemical "mechanism," highly sensitive, which results in alteration of the metabolism of DNA, RNA, and proteins, expressed quantitatively and qualitatively.

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172 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PENETRATION OF INACTIVATED DNA INTO COMPETENT CELLS OF BACILUS
SUBTILIS IN THE COURSE OF TRANSFORMATION -U-
AUTHOR--(03)-BRESLER, S.YE., KALININ, V.L., PERUMOV, D.A.
COUNTRY OF INFO--USSR
SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 414-421
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DNA, BACILLUS SUBTILIS, PHOSPHORUS ISOTOPES, CHEMICAL
LABELLING, CHEMICAL DECOMPOSITION, CHROMOSOME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0185 STEP NO--UR/0463/70/004/003/0414/0421
CIRC ACCESSION NO--AP0120883
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 009

CIRC ACCESSION NO--AP0120883

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DECREASE IN THE ABILITY OF TRANSFORMING DNA TO PENETRATE INTO COMPETENT CELLS OF BACILLUS SUBTILIS UNDER THE INFLUENCE OF INACTIVATING AGENTS (UV LIGHT, NITROUS ACID, DIMETHYLSULFATE, HYDROXYLAMINE OR HYDRODYNAMIC SHEARING) WAS STUDIED USING A PRIME32 P LABELED DNA PREPARATION. IT WAS SHOWN THAT CHEMICAL OR PHYSICAL MODIFICATION OF ISOLATED DNA CAUSES A DRASTIC LOSS OF TRANSFORMING ACTIVITY BUT ONLY SLIGHT CHANGE OF IRREVERSIBLE DNA UPTAKE BY COMPETENT CELLS. WHEN TRANSFORMING ACTIVITY IS REDUCED 100 FOLD THE EXTENT OF PENETRATION INTO COMPETENT CELLS DECREASES ONLY FOR 10-80PERCENT. IT WAS CONFIRMED BY DIRECT MEASUREMENTS THAT THE STUDY OF THE COMPETITION OF A GENETICALLY INACTIVE DNA WITH THE TRANSFORMING ONE GIVES GOOD RESULTS FOR THE ESTIMATION OF DNA UPTAKE IN THE CASE WHEN LETHAL HITS ARE PREVENTED FROM INTEGRATION INTO THE RECIPIENT CHROMOSOME. FACILITY: INSTITUTE OF HIGH MOLECULAR WEIGHT COMPOUNDS, ACADEMY OF SCIENCES, USSR, LENINGRAD.

UNCLASSIFIED

USSR

P
UDC 547.963.3

BRESLER, S. Ye., KALININ, V. L., and PERUMOV, D. A., Institute of High-Molecular Compounds, Academy of Sciences USSR

"Penetration of *Bacillus subtilis* Cells by Inactivated DNA During Transformation"

Moscow, *Molekulyarnaya Biologiya*, No 3, 1970, pp 414-421

Abstract: Six inactivating agents (UV light, nitrous acid, dimethylsulfate, hydroxylamine, pancreatic desoxyribonuclease I, and hydrodynamic fragmentation) perceptibly decreased the capacity of DNA to penetrate *Bacillus subtilis* cells. For example, treatment with hydroxylamine decreased the capacity of DNA to penetrate the cells by 10 to 15%. However, these agents had little influence on the irreversible uptake of DNA by competent cells. A 100-fold decrease in transforming activity reduced the DNA uptake by the recipient cells by 10 to 80%. It was shown that the method of competitive suppression of transformation can be used to measure the capacity of competing DNA to penetrate competent cells, when lethal injuries can be prevented from being incorporated into chromosomes of recipient cells.

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Acc. Nr:

AP0045617

Abstracting Service: P/70
CHEMICAL ABST.

Ref. Code:

NE 0000

62736q Inactivation and mutagenesis of isolated DNA. V. Importance of repairing enzymes for the inactivation of transforming DNA in vitro. Bresler, S. E.; Kalinin, V. L.; Perumov, D. A. (Inst. High Mol. Weight Compounds, Leningrad, USSR). *Mutat. Res.* 1970, 9(1), 1-19 (Eng). The role of repair enzymes in the inactivation rate of transforming DNA was studied. Comparative studies were carried out on recipient strains with and without dark repair (*hcr*⁻ and *uvr*⁻). Pronounced dark repair was found for lesions induced in vitro in DNA by uv irradiation, HNO₂, Me₂SO, and N-methyl-N'-nitro-N-nitrosoguanidine. On the other hand, after treatment with NH₂OH and pancreatic DNase, the residual transforming activity was the same when assayed on *uvr*⁺, *uvr*⁻ or *hcr*⁻ as hosts. Recombinogens (moderate uv irradiation and mitomycin C) were used on recipient cells to enhance genetic recombination and the rescue of genetic markers during transformation. Both effects changed in parallel as a function of the recipient cells' survival. A quantitative estimate shows that the rescue of inactivated DNA is due partly to DNA repair and partly to increased recombination frequency. Finally, photoreactivating enzyme from baker's yeast acts not only on inactivating damage induced in transforming DNA by uv irradiation, but also on mutational events generated by irradiation in vitro. This observation confirms that pyrimidine dimers are the main lesions in both conditions. RCMR

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REEL/FRAME

19780594

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--END WINDOW MINIATURE COUNTER FOR SOFT BETA RADIATION -U-
AUTHOR-(04)-BESKORSKIY, A.I., PERUYSHEV, E.V., MADUYEV, V.L., CHECHETINA,
N.A.
COUNTRY OF INFO--USSR
SOURCE--PRIB. TEKH. EKSP. 1970, 1, 66-7
DATE PUBLISHED-----70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--BETA PARTICLE DETECTOR, GAMMA BACKGROUND, MICA, RADIATION
COUNTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1881 STEP NO--UR/0120/70/001/000/0066/0067
CIRC ACCESSION NO--AP0108211
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0108211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MINIATURE BETA COUNTER WITH AN
END WINDOW IS DESCRIBED WHICH IS CONVENIENT FOR CONTROLLING BETA
RADIATION ON GAMMA BACKGROUND NOISE IN VACUUM. THE DIMENSIONS AND
THICKNESS OF THE MICA WINDOW OF THE COUNTER ARE SIGNIFICANTLY SMALLER
THAN IN INDUSTRIAL VERSIONS OF SIMILAR DEVICES. THE CONSTRUCTION AND
PARAMETERS ARE GIVEN.

UNCLASSIFIED

USSR

UDC 576.858.4.085.23

MAKSIMOVICH, N. O., GILEVICH, Ye. V., VASINA, A. G., PERVACHENKO, S. V., and
RYBINSKAYA, I. N., Kiev Scientific Research Institute of Infectious Diseases

"Changes in Cells Induced by Certain Parainfluenza Viruses"

Kiev, Mikrobiologicheskii Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 466-472

Abstract: The cytopathic effects of types I, II, and III parainfluenza viruses on primary trypsinized monkey kidney cultures were studied. Enlargement of the nuclei and nucleoli, accumulation of RNA protein in the nucleoli and cytoplasm, disintegration of the chromatin and further changes in the shape of the nucleus, and formation of symplasm (varying according to the infectious dose of virus per cell) were observed. Eosinophilic inclusions in the cytoplasm were common but are not specific to viral infection of cells, since they appear in noninfected cultures as well. Immunofluorescence revealed the presence of viral antigen in the infected cells only during the first 3 days following inoculation. In 1- and 2-day-old mice, the epithelial cells of the respiratory tract showed marked proliferation, desquamation, and formation of cells with 3 and 4 nuclei. The perinuclear part of the cytoplasm fluoresced during the first 3 days after infection. The prolonged survival of the culture after infection

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USSR

MAKSIMOVICH, N. O., et al, Mikrobiologicheskii Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 466-472

was evidence of the weak cytotoxic effect of the parainfluenza viruses. This phenomenon was most pronounced in the symplasm, causing it to decrease and then disappear within 4 days.

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- 18 -

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CONVERSION OF CYANO TERTIARY AMINO DIENES INTO SUBSTITUTED
AMINOPYRIDINES. NEW INTRAMOLECULAR REARRANGEMENT -U-
AUTHOR-(03)-PERVEYEV, F.YA., IVAKHNYUK, M.S., KOSHMINA, N.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1116
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PYRIDINE, CHEMICAL SYNTHESIS, INTERMOLECULAR COMPLEX, TERTIARY
AMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3006/1286 STEP NO--UR/0366/70/006/005/0001/1116
CIRC ACCESSION NO--AP0134960

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134960

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF R SUB2 NH (R IS
ET, PR, BU) WITH NEC:CCME:CHCN AT 100DEGREES GAVE R SUB2 NCME:CHCME:CHCN
(I). HEATING I IN A SEALED TUBE WITH/A FEW DROPS OF WATER GAVE 2, (R
SUB2 N SUBSTITUTED), 4,6, DIMETHYLPYRIDINES. IN THE SAME WAY 2,
PIPERIDINO, 4,6, DIMETHYLPYRIDINE WAS PREPD. FACILITY: LENINGRAD.
GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

172 018 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CONDENSATION OF ALKYL PHENYL ETHERS WITH 2,3-BUTANEDIONE IN THE
PRESENCE OF A BF SUB3.4 SUB3 PO SUB4 COMPLEX -U-
AUTHOR--(02)-ZAVGORODNIY, S.V., PERVEYEV, V.F.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(3) 537-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHENYL ETHER, BORON COMPOUND, KETONE, COMPLEX COMPOUND,
AROMATIC HYDROCARBON, ETHANE, CONDENSATION REACTION, BORON FLUORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FILE/FRAME--1992/1535 STEP NO--UR/0366/70/005/003/0537/0539
CIRC ACCESSION NO--AP0112529
UNCLASSIFIED

hardness of the five materials tested. It was hypothesized that the microhardness

UNCLASSIFIED

PROCESSING DATE--0206170

2/2 018
ACCESSION NO--AP0112529

ABSTRACT--TUM 69-0- ABSTRACT. THE REACTION OF PHINE OR PHOET
WITH AC SUB2 IN THE PRESENCE OF BF SUB3.M SUB3 PD SUB4 COMPLEX GAVE
SMALLER THAN OR EQUAL TO 80PERCENT ACCEMIC SUB6 M SUB4 OR-P3 SUB7 AND
5-11PERCENT ACCEMIC SUB6 M SUB4 OR-P3 SUB7 AND
ET). THE FUSION OF THESE COMPOS. WITH KON DEAC ETYLATES THEN TO THE
CORRESPONDING DIARYLETHANES.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--END WINDOW MINIATURE COUNTER FOR SOFT BETA RADIATION -U-
AUTHOR--(04)-BESKORSKIY, A.I., PERUYSHEV, E.V., MADUYEV, V.L., CHECHETINA,
N.A.
COUNTRY OF INFO--USSR
SOURCE--PRIB. TEKH. EKSP. 1970, 1, 66-7
DATE PUBLISHED-----70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--BETA PARTICLE DETECTOR, GAMMA BACKGROUND, MECA, RADIATION
COUNTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1881 STEP NO--UR/0120/70/001/000/0066/0067
CIRC ACCESSION NO--AP0108211
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0108211

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A MINIATURE BETA COUNTER WITH AN END WINDOW IS DESCRIBED WHICH IS CONVENIENT FOR CONTROLLING BETA RADIATION ON GAMMA BACKGROUND NOISE IN VACUUM. THE DIMENSIONS AND THICKNESS OF THE MICA WINDOW OF THE COUNTER ARE SIGNIFICANTLY SMALLER THAN IN INDUSTRIAL VERSIONS OF SIMILAR DEVICES. THE CONSTRUCTION AND PARAMETERS ARE GIVEN.

UNCLASSIFIED

USSR

UDC 576.858.4.085.23

MAKSIMOVICH, N. O., GILEVICH, Ye. V., VASINA, A. G., PERVACHENKO, S. V., and
RYBINSKAYA, L. N., Kiev Scientific Research Institute of Infectious Diseases

"Changes in Cells Induced by Certain Parainfluenza Viruses"

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USSR

MAKSIMOVICH, N. O., et al, Mikrobiologicheskiy Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 466-472

was evidence of the weak cytotoxic effect of the parainfluenza viruses. This phenomenon was most pronounced in the symplasm, causing it to decrease and then disappear within 4 days.

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- 18 -

I/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CONVERSION OF CYANO TERTIARY AMINO DIENES INTO SUBSTITUTED
AMINOPYRIDINES. NEW INTRAMOLECULAR REARRANGEMENT -U-
AUTHOR--(03)-PERVEYEV, F.YA., IVAKHNYUK, M.S., KOSHMINA, N.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1116
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PYRIDINE, CHEMICAL SYNTHESIS, INTERMOLECULAR COMPLEX, TERTIARY
AMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1286 STEP NO--UR/0366/70/006/005/0001/1116
CIRC ACCESSION NO--AP0134960
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134960

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF R SUB2 NH (R IS
ET, PR, BU) WITH HEC:CCME:CHCN AT 100DEGREES GAVE R SUB2 NCME:CHCME:CHCN
(I). HEATING I IN A SEALED TUBE WITH/A FEW DROPS OF WATER GAVE 2, (R
SUB2 N SUBSTITUTED), 4,6, DIMETHYLPYRIDINES. IN THE SAME WAY 2,
PIPERIDINO, 4,6, DIMETHYLPYRIDINE WAS PREPD. FACILITY: LENINGRAD.
GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--CONDENSATION OF ALKYL PHENYL ETHERS WITH 2,3-BUTANEDIONE IN THE
PRESENCE OF A BF SUB3.H SUB3 PO SUB4 COMPLEX -U-
AUTHOR--(02)-ZAVGUBRODINIY, S.V., PERVEYEV, V.F.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(3) 537-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHENYL ETHER, BORON COMPOUND, KETONE, COMPLEX COMPOUND,
AROMATIC HYDROCARBON, ETHANE, CONDENSATION REACTION, BORON FLUORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PRIMRY FILE/FRAME--1992/1535 STEP NO--02/0356/70/006/003/0537/0539
CIRC ACCESSION NO--AP0112929
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--APO112529

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF PHONE OR PHOET WITH AC SUB2 IN THE PRESENCE OF BF SUB3. H SUB3 PD SUB4 COMPLEX GAVE SMALLER THAN OR EQUAL TO 89PERCENT ACCMEIC SUB6 H SUB4 OR-P) SUB2 AND 8-11PERCENT ACCMEIC SUB6 H SUB4 OR-P)C SUB6 H SUB4 OR-O (K EQUALS ME OR ET). THE FUSION OF THESE COMPOS. WITH KOH DEAC ETYLATES THEM TO THE CORRESPONDING DIARYLETHANES.

UNCLASSIFIED

UDC 546.26:542.915:535.495
L. S., PERVINA, N. V., and SYSKOV, K. I.
Vigilation of Pyrolytic Carbon at 2200-2500°C
Moscow, Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 40-43
Abstract: The effect of heat treatment on the structures and properties of carbon-bonded materials was studied by using samples of filamentary carbonized fibers bonded with pyrolytic carbon, crushed into samples with a density of 1.6 g/cm³ rubble. The test materials were made from coke and graphite-base for the rate of 800°/hr with a one-hour soak at maximum temperature. The graphitizing at the rate of 800°/hr revealed that the highest hardness was produced in the fibers with heating at 2200°C -- revealed that the hardness dropped rapidly and above 2000°C had the lowest microhardness (2800°C) -- revealed that the hardness dropped rapidly and above 2000°C had the lowest microhardness. It is recommended that in the production of thermally stable pyrolytic carbon-bonded materials an attempt should be made to create a concial structure.

UDC 546.26.542.915.536.495

USSR

KONDRATOVA, L. S., PERVINA, N. V., and SYSKOV, K. I.

"Investigation of Pyrolytic Carbon at 2200-2600°C"

Moscow, Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 40-43

Abstract: The effect of heat treatment on the structure and properties of carbon-bonded materials was studied by using samples of filamented carbonized fibers bonded with pyrolytic carbon, crushed pyrolyzed petroleum coke, and graphitized rubble. The test materials were made into samples with a density of 1.6 g/cm³ for the fibrous material and 1.85-1.90 g/cm³ for the coke- and graphite-base materials. Microhardness tests of the samples after heat treating-heating at the rate of 800°/hr with a one-hour soak at maximum temperature (2800° C) -- revealed that the highest hardness was produced in the fibers with pyrolytic carbon with hardness decreasing with increased temperature. The coke with pyrolytic carbon had a microhardness slightly under that of the pyrolytic fibers but this hardness dropped rapidly and above 2000° C had the lowest hardness of the five materials tested. It was hypothesized that the microhardness drop of pyrolytic carbon is caused to a considerable degree by the breakdown of its conical structure. It is recommended that in the production of thermally stable pyrolytic carbon-bonded materials an attempt should be made to create a

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USSR

KONDRATOVA, L. S., et al., Neorganicheskiye Materialy, Vol 10, No 1, Jan 74,
pp 40-43

skeleton structure in which the bonding chains have the smallest possible
dimensions. Four figures, three bibliographic references.

2/2

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USSR

UDC 536.46:533.6

PERVITSKAYA, E. A., SKABIN, A. P., TARASYUK, V. A.

"Approximation Methods for Studying Diffusion Combustion in a System of Turbulent Jets"

V sb. Gorennye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 352-356 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B949)

Translation: A system of jets of hot components flowing from parallel channels (plane of circular) with thin walls and located in a certain order is discussed. The problem is reduced to the solution of heat conductivity equations for rectangular profiles of all gasdynamic values given at the input to the combustion zone by introducing ordinary Mises variables and linearization. A simple relationship is established between the longitudinal pressure drop Δp and the coefficient of combustion completeness ϵ

$$|\epsilon = \Delta p / \Delta p_{\infty}| \quad ,$$

where Δp_{∞} is the drop in the insufficient component under total combustion. Analysis of the measurements of the coefficient of completeness of combustion

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USSR

PERVITSKAYA, E. A., et al, Gorennye i vzryv, Moscow, "Nauka", 1972, pp 352-356

given by different authors made it possible to establish a fairly general relationship between this and the input parameters in the case of an axisymmetric flow: $\epsilon = 1 - e^{-ax^2}$, where x is the longitudinal coordinate and a is the coefficient determined by the geometry, the relationship of the densities, and the stoichiometric coefficient. Authors' abstract.

2/2

- 46 -

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USSR

UDC 620.179.15

GERSHBERG, M. V., ZELENKOV, A. L., ILYUSHIN, S. V., PERVITSKIY, Yu. D.,
RUDAKOV, V. N.

"The RT-68 Radiation Defectoscope"

Defektoskopiya, No 4, 1971, pp 115-121.

Abstract: A description is presented of the RT-68 commercial radiation defectoscope, designed for testing of glass reenforced plastic pipe and other types of pipe of similar dimensions. The defectoscope operates by the principle of mechanical scanning of the probe device, producing a visual picture of the distribution of defects. The device consists of the probe device with its lines, intermediate frequency amplifiers and power supply, the scanning mechanism of the probe device and the defect recording system, consisting of the visualization unit and beam scanning sensors. A block diagram and photograph of the device are presented.

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- 130 -

USSR

UDC 621.357.7:669.245'295

SOFRONKOV, A. N., VOLGSHIN, A. G., PRESNOV, V. A., and PERVIY, E. N.

"Structure of Ni-Ti Alloys Prepared Electrochemically"

Izv. vyssh. ucheb. zavedeniy. Khimiya i khim. tekhnol. (Studies of the Higher Institute of Learning. Chemistry and Chemical Technology), 15, No 10, 1972, pp 1567-1569 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L387 by L. S. Kanevskiy)

Translation: The conditions were studied for the simultaneous electro-deposition of Ni and Ti and the phase compositions of the compound obtained. The alloy is precipitated from a boron hydrogen fluoride and a sulfate electrolyte at a D_k of 1-20 a/dm². Photoelectrocolorimeter and X-ray studies showed that the concentration of Ti in the alloy fluctuated from 1-10% as a function of the D_k and the composition of the electrolyte; an increase in D_k increased the Ti concentration. The Ni-Ti alloys represent solid solutions of Ti substituting for Ni. Calculation of the crystal lattice constant a_{Ni-Ti} [sic. maybe should read a_{Ni-Ti}] derived from the quadratic formula, gave a value of a_{Ni-Ti} of 3.56 and 3.54 Å for alloys obtained from the boron-hydrogen fluoride and from the sulfate electrolyte respectively.

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- 6 -

Electrochemistry

USSR

UDC 541.11

SOFRONKOV, A. N., VOLOSHIN, A. G., PRESNOV, V. A., and PERVIY, E. N.,
Odessa State University imeni I. I. Mechnikova

"Structure of the Ni-Ti Alloy Prepared Electrochemically"

Ivanovo, Khimiya i Khimicheskaya Tekhnologiya, Vol 15, No 10, 1972, pp
1567-1569

Abstract: When the simultaneous electrodeposition of titanium and nickel is carried out, the rate of discharge of nickel ions is somewhat lower and that of titanium somewhat higher than for the deposition of each metal individually. The phase composition of such simultaneously deposited alloys was studied. The concentration of Ti, analyzed by colorimetric and X-ray techniques, ranged from 1-10% and varied with the particular acid used in the electrolyte solution and with the surface current.

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"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002202410014-5

APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002202410014-5"

USSR

UDC 536.46:533.6

PERVITSKAYA, E. A., SKABIN, A. P., TARASYUK, V. A.

"Approximation Methods for Studying Diffusion Combustion in a System of Turbulent Jets"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 352-356 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 38949)

Translation: A system of jets of hot components flowing from parallel channels (plane of circular) with thin walls and located in a certain order is discussed. The problem is reduced to the solution of heat conductivity equations for reaction profiles of all gasdynamic values given at the input to the combustion zone by introducing ordinary Mises variables and linearization. A simple relationship is established between the longitudinal pressure drop Δp and the coefficient of combustion completeness:

where Δp_{∞} is the drop in the insufficient component under total combustion. Analysis of the measurements of the coefficient of completeness of combustion

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USSR

KONDRATOVA, L. S., et al., Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 40-43

skeleton structure in which the bonding chains have the smallest possible dimensions. Four figures, three bibliographic references.

USSR

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- 46 -

USSR

UDC 620.179.15

1
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- 130 -

USSR

UDC 621.357.7:669.245'295

SOFRONKOV, A. N., VOLOSHIN, A. G., PRESNOV, V. A., and PERVIY, E. N.

"Structure of Ni-Ti Alloys Prepared Electrochemically"

Izv. vyssh. ucheb. zavedeniy. Khimiya i khim. tekhnol. (Studies of the Higher Institute of Learning. Chemistry and Chemical Technology), 15, No 10, 1972, pp 1567-1569 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L387 by L. S. Kanevskiy)

Translation: The conditions were studied for the simultaneous electro-deposition of Ni and Ti and the phase compositions of the compound obtained. The alloy is precipitated from a boron hydrogen fluoride and a sulfate electrolyte at a D_k of 1-20 a/dm². Photoelectrocolorimeter and X-ray studies showed that the concentration of Ti in the alloy fluctuated from 1-10% as a function of the D_k and the composition of the electrolyte; an increase in D_k increased the Ti concentration. The Ni-Ti alloys represent solid solutions of Ti substituting for Ni. Calculation of the crystal lattice constant a_{Ni-Ti} [sic. maybe should read a_{Ni-Ti}] derived from the quadratic formula, gave a value of a_{Ni-Ti} of 3.56 and 3.54 Å for alloys obtained from the boron-hydrogen fluoride and from the sulfate electrolyte respectively.

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Electrochemistry

USSR

UDC 541.11

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USSR

UDC 616.988.75+616.988-06:616.981.25]-06:616.127-092.9

NAKSIMOV, V. A., BALLYABIN, A. A., DYGIN, V. P., PERVOMAYSKIY, A. G., and TOPLENINOVA, K. A., Chairs of Faculty Therapy, Microbiology and Pathological Anatomy, Military Medical Academy imeni S. M. Kirov, Leningrad

"Myocardial Lesions in Experimental Influenza and Mixed (Viral-Staphylococcal Infection"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 21-25

Abstract: EKG examination of mice several days after intranasal infection with influenza A1 virus revealed pronounced bradycardia, marked slowing of intraventricular conduction, lengthening of electric systole, and deviation of the electric axis of the heart to the right. Histological study of the myocardium showed evidence of circulatory disorders, edema of connective tissue, and degenerative changes in the muscle fibers. Influenza combined with staphylococcal infection produced more severe degenerative and inflammatory changes in the myocardium. Similar changes occurred when staphylococcal infection preceded influenza.

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MAKSIMOV, V. A., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 21-25

In the 3rd week of the mixed infection, antibodies to the heart were found in the serum of several animals whose EKG's showed substantial changes caused by inflammatory and sclerotic phenomena in the myocardium. This suggests that autoimmune mechanisms may be involved in the myocardial lesions resulting from mixed influenza and staphylococcal infection.

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UDC 633.15.02:677.3:582.285.12

PERVOVA, A. YA., Chair of Higher Plants

"Anatomy of Maize Irradiated with Cs¹³⁷ and Infected With Ustilago maydis (DC)Cda."

Moscow, Vestnik Moskovskogo Universiteta, Seriya VI, Biologiya, Pochvovedeniye, No 3, May/Jun 72, pp 45-49

Abstract: Differences in growth among normal maize sprouts, sprouts irradiated with Cs¹³⁷ (10 curies at 16 min), and sprouts infected with corn smut Ustilago maydis immediately after irradiation were compared. As compared to control plants, irradiated sprouts were shorter on the 6th day after treatment and evidenced morphological abnormalities of the leaves, roots, and shoots. Cells in the main shoot were highly vacuolated, and dividing nuclei and cells were not found. While control plants had 2-3 unrolled and 3-4 rolled leaves by the 9th day, irradiated plants had only 2 fully unrolled leaves out of 6 by the 3d week. Shoot and leaf vascular bundles and the cambial strands also developed poorly in irradiated sprouts. Leaf parenchyma cells were hypertrophied and irregular. Starch content of irradiated sprout leaves and shoots was higher, probably due to poorer utilization for growth. Leaf stomates were irregular in shape, sometimes incomplete, and grouped together. While U. maydis stimulated mitotic activity and gall formation in normal plants, mycelial growth occurred in irradiated plants but cell division and gall formation did not.

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USSR

UDC 632.211:633.15:632.451

PERVOVA, A. Ya., Chair of Higher Plants, Moscow State University

"Morphological Changes in the Vegetative Organs of Corn Affected by Gall-Producing Smut"

Moscow, Vestnik Moskovskogo Universiteta, Seriya 6, Biologiya, Pochvovedeniye, No 5, Sep/Oct 70, pp 31-35

Abstract: Four-day-old corn seedlings (Moskovskaya rannaya) were infected with a suspension of sporidia from a pure culture of *Ustilago maydis* (DC.) Cda. obtained from spores isolated from galls on a liquid nutrient medium. The first signs of the disease (light spots of the leaf blades and a slight thickening of the base of the stem) appeared 8 days after infection. The infected plants were shorter than the controls. In 11-day-old plants, the base of the stem was markedly thickened and the leaf sheathes and blades had galls. By day 4 the axillary buds in many of the diseased plants had reached substantial proportions. Small yellowish-brown spots caused by the death of cells appeared on the leaf blades of the 4th, 5th, and 6th leaves on day 14. Most of the plants died between days 22 and 25.

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--NITRILE AND ESTERS OF BETA,PERFLUORO-TERT-BUTYL, PROPIONIC ACID -U-

AUTHOR-(03)-KNUNYANTS, I.L., PERVOVA, YE.YA., DELYAGINA, N.I.

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CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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PRESENCE OF CSF OF KF. FACILITY: INSTITUT
ELEMENTOORGANICHESKIKH SOYEDINENIY AN SSSR.

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1/2 007 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--PREPARATION OF SOLUTIONS OF BASIC ALUMINUM CHLORIDES -U-
AUTHOR--(05)-PEREVOZKIN, YU.L., FURMAN, A.A., KOGAN, V.M., VAKSMAN, P.A.,
KARTALOV, B.V. *p*
COUNTRY OF INFO--USSR
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DATE PUBLISHED--06JAN70
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TOPIC TAGS--CHEMICAL PATENT, ALUMINUM HYDROXIDE, ALUMINUM CHLORIDE,
AQUEOUS SOLUTION
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